

WE CLAIM:

1. 1. A method of fabricating an ion optic device comprising the steps of: shaping a ceramic material into at least a portion of the ion optic device; and covering at least a portion of the shaped ceramic material with at least one material selected from a group consisting of a conductive material and a resistive material.
2. 2. The method of claim 1 further comprising the step of removing a portion of the covering material.
3. 3. The method of claim 1 wherein the ceramic material is a material selected from the group consisting of a ceramic, a glass, and a glass-ceramic.
4. 4. The method of claim 1 wherein the conductive material is metal.
5. 5. The method of claim 2 wherein the step of shaping a ceramic material comprises providing a substantially cylindrical bore in the ceramic material; and wherein the step of removing a portion of the covering material comprises removing at least two portions of the covering material on opposing surfaces of the interior of the bore to create at least two separate, opposing areas of covering material.

1 6. The method of claim 2 wherein the step of shaping a ceramic material
2 comprises providing a cavity in the ceramic material; and

3 wherein the step of removing a portion of the covering material comprises
4 removing at least one portion of the covering material circumscribing the interior perimeter
5 of the cavity to create at least two substantially parallel bands of conductivity on an inner
6 surface of the cavity.

7. The method of claim 6 wherein the cavity extends through the ceramic
material; and

 further comprising the step of attaching a conductive grid over one end of the cavity.

8. The method of claim 6 further comprising the step of separating the ceramic
material into a first portion and a second portion; and

3 joining the first portion and the second portion back together with a
4 conductive grid therebetween.

1 9. The method of claim 2 wherein the step of shaping a ceramic material
2 comprises providing a cavity having a blind end in the ceramic material;

3 wherein the step of covering at least a portion of the shaped ceramic material
4 with at least one covering material comprises covering at least a portion of the blind end in
5 the interior of the cavity with a conductive material.

1 10. An ion optic device for manipulating ions in a vacuum, comprising:
2 a ceramic substrate having a cavity therein; and
3 a conductive coating on at least a portion of an interior surface of the cavity,
4 the conductive coating provided for receiving an applied voltage to act upon the ions.

1 11. The device of claim 10 wherein the cavity is a substantially cylindrical bore;

2 and

3 wherein the conductive coating is provided in at least two separate areas on opposing
4 surfaces of the bore.

1 12. The device of claim 11 wherein the at least two separate areas of conductive
2 coating are separated by secondary bore having an axis parallel to the central bore.

1 13. The device of claim 10 wherein the cavity has a blind end and wherein the
2 blind end is coated with the conductive coating.

1 14. The device of claim 10 wherein the conductive coating is provided in at least
2 two separate bands circumscribing the cavity.

1 15. The device of claim 10 wherein the cavity has an open end and the device
2 further comprises a conductive grid attached to the ceramic substrate over the open end.

1 16. The device of claim 10 wherein the ceramic substrate is provided in at least
2 two portions and a conductive grid is provided between the two portions.

1 17. The device of claim 10 wherein the ceramic is a glass-ceramic.

1 18. The device of claim 10 wherein the cavity has an open end and the device
2 further comprises an electrode member attached to the ceramic substrate over the open end.